

1 CLAIMS

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3 1. A method of selecting a strain of lactic acid-
4 utilising bacteria, which method comprises the
5 steps of:

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7 a) providing a bacterial culture from a human
8 faecal sample;

9 b) selecting a single colony of bacteria;

10 c) growing said colony in a suitable medium
11 containing lactic acid; and

12 d) selecting a strain of bacteria consuming
13 relatively large amounts of lactic acid,

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15 all of the above steps being conducted under
16 anaerobic conditions.

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18 2. The method as claimed in Claim 1 wherein at
19 least 10mM of lactic acid is consumed during
20 growth into the stationary phase per 24 hours
21 at 37°C in YCFALG or YCFAL medium.

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23 3. The method as claimed in either one of Claims 1
24 and 2 wherein said method comprises the
25 additional step of:

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27 e) selecting a strain of bacteria producing
28 relatively large quantities of butyric
29 acid.

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31 4. The method as claimed in Claim 3 wherein at
32 least 10mM butyric acid is produced during

1 bacterial growth into the stationary phase per
2 24 hours at 37°C in YCFALG or YCFAL medium.

3

4 5. The method as claimed in any one of Claims 1 to
5 4 wherein said lactic acid is a mixture of D
6 and L isomers of lactic acid.

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8 6. *Anaerostipes caccae* strain L1-92 deposited at
9 NCIMB under No. 13801^T.

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11 7. *Clostridium indolis* bacterial strain Ss2/1
12 deposited at NCIMB under No. 41156.

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14 8. *Eubacterium hallii* strain SM 6/1 deposited at
15 NCIMB under No. 41155.

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17 9. A lactic acid utilising bacterium having a 16S
18 rRNA gene sequence with at least 95% homology
19 to one of the sequences shown in Fig. 1.

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21 10. A bacterial strain as claimed in any one of
22 Claims 6 to 9 for use as a medicament to treat
23 lactic acid induced disorders or as a
24 foodstuff.

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26 11. A bacterial strain as claimed in Claim 10 for
27 use as a medicament to treat lactic-acidosis,
28 short bowel syndrome or inflammatory bowel
29 disease.

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31 12. A method to promote butyric acid formation in
32 the intestine of a mammal, said method

1 comprising the administration of a
2 therapeutically effective dose of at least one
3 of the strains of bacteria as claimed in any
4 one of Claims 6 to 9.

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6 13. The method of Claim 12 wherein said bacteria is
7 administered as a foodstuff or as a
8 suppository.

9

10 14. A method for treating a disease associated with
11 a high dosage of lactic acid, which method
12 comprises the administration of a
13 therapeutically effective dose of at least one
14 strain of live lactic acid utilising bacteria
15 as claimed in any one of Claims 6 to 9.

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17 15. The method of Claim 14 wherein said disease is
18 lactic-acidosis, short bowel syndrome or
19 inflammatory bowel disease.

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21 16. The method of either one of Claims 14 and 15
22 wherein said bacteria is *Anaerostipes caccae*.

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24 17. A prophylactic method to reduce the incidence
25 or severity of colorectal cancer or colitis in
26 mammals caused in part by high lactic acid and
27 low butyric acid concentrations, which method
28 comprises the administration of a
29 therapeutically effective dose of at least one
30 strain of live lactic acid utilising bacteria
31 as claimed in any one of Claims 6 to 9.

32

1 18. The method of Claim 17 wherein said bacteria is
2 *Anaerostipes caccae*.

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4 19. A probiotic composition comprising a live
5 bacterial strain as claimed in any one of
6 Claims 6 to 9, in combination with live lactic
7 acid producing bacteria.

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9 20. The composition as claimed in Claim 19 wherein
10 said lactate acid producing bacteria is
11 *Lactobacillus spp*, *Bifidobacterium spp* or a
12 mixture thereof.

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14 21. The method of either one of Claims 19 and 20
15 wherein said bacteria is *Anaerostipes caccae*.

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17 22. The composition as claimed in any one of Claims
18 19 to 21 further containing other additives or
19 growth enhancing supplements.